REMARKS

Claims 1-15 are pending in this application. By this Amendment, claims 1 and 15 are amended. Claims 6-14 have been withdrawn by the Examiner as being directed to a non-elected invention. No new matter is added. Support for the changes to claims 1 and 15 may be found, for example, in paragraphs [0052], [0056], and [0057].

The specification is objected to for including a typographical error in paragraph [0051] and the title not being descriptive. Paragraph [0051] and the title have been amended as suggested by the Office Action. Withdrawal of the objections to the specification is respectfully requested.

Claims 1-5 and 15 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite with the terms and phrases discussed below, and as recited in claims 1, 3 and 15. This rejection is respectfully traversed.

Applicants respectfully submit that the following terms are definite in view of the cited paragraphs of the present specification:

With respect to "hollow filling unit" in claim 1 and "filling unit" in claim 15, please refer to paragraphs [0005] and [0038]-[0040]. With reference to at least one embodiment, the "filling unit" includes everything associated with the heat exchanger 30, such as the casing 34, filter 36, manifold plates 38 and 39, the water coolant system including tubes 55, 37, 57, and 60, and the hydrogen gas system including flat plates 31, corrugated plates 32, hydrogen inlet 61 and the hydrogen storage alloy.

With respect to the "detachable cover member" in claim 1, please see paragraph [0050]. In at least one embodiment, the detachable cover member is a bolt and o-ring used to close hydrogen inlet 61 while the heat exchanger 30 is being heat treated.

With respect to "narrowing the opening" in claim 1, please see paragraphs [0007], [0022], [0054] and [0078]. Applicants respectfully submit that a person skilled in the art of

making gas storage tanks will know which "narrowing" procedures are applicable to a hollow tank container, such as tank containers 20, 120 and 150 shown in the drawings.

With respect to "filling unit includes a fin structure interiorly, wherein the fin structure comes into contact with the absorbent/adsorbent" in claim 3, please see paragraphs [0010]-[0013]. In at least one embodiment, this structure includes the thin plates 31 and corrugated plates 32.

Applicants have amended claims 1, 3 and 15 to address the § 112, second paragraph concerns with the following terms by replacing the language as shown below:

"Heat-treating said outer wall member with narrowed opening under water cooling" in claim 1 was replaced with "heat-treating said outer wall member with the narrowed opening followed by water cooling."

"Detaching the cover member from said filling unit" in claim 1 was replaced with "detaching and removing the cover member from said filling unit housed in said outer wall member after the heat treatment."

"Connecting inside of said filling unit with outside of said outer wall member" in claim 1 has been replaced with "connecting said filling unit with a supply of gas via the narrowed opening of said outer wall member."

"Tank" as used throughout claim 15 other than in the preamble was amended to recite "tank container" so as to distinguish this feature from the "gas storage tank" in the preamble of claim 15.

"Connect a whole gap" in claim 15 was replaced with "arranging a support member between said filling unit and said tank container to fill a gap formed between said tank container and said filling unit and hold said filling unit within said tank."

"Heat-treating said tank under water cooling" in claim 15 was replaced with "heat-treating said tank container followed by water cooling."

In view of the above amendments and support from the specification that defines some of the terms, Applicants request withdrawal of the 35 U.S.C. §112, second paragraph rejection.

Claims 1-3 and 5 stand rejected under 35 U.S.C. §103(a) over Cook, U.S. Patent No. 3,006,153. This rejection is respectfully traversed.

Claim 1, directed to a method of manufacturing a gas storage tank, recites in pertinent part, providing a hollow filling unit and a metal outer wall member that is configured to receive said filling unit therein; filling said filling unit with a gas absorbent/adsorbent for absorbing and/or adsorbing the gas; attaching a detachable cover member to said filling unit to block up an opening of said filling unit...heat-treating said outer wall member with the narrowed opening followed by water cooling, detaching and removing the cover member from said filling unit...after said heat treating, and connecting said filling unit with a supply of gas ... so as to allow for storage and release of the gas into and from the absorbent/adsorbent.

Cook fails to teach or suggest a manufacturing method for a gas storage tank that heat treats an outer wall member *in situ* once a filling unit has been placed into the outer wall member. Applicants can find no disclosure within Cook where the larger casing 12 with the inner vessel 10 disposed therein is first heat-treated and then water cooled.

Moreover, Cook fails to teach or suggest attaching a detachable cover member to the filling unit to block the cooling water from entering the fill unit during heat treating and subsequently removing this detachable cover member so that the filling unit can be connected to a supply of gas. Using the Office Action's construction, Cook's cover 17 with bursting lid 20 is attached to the inner vessel 10 at all times once the apparatus is assembled.

Because Cook fails to teach or suggest all features of independent claim 1, withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-3 and 5 is respectfully requested.

Claim 4 stands rejected under 35 U.S.C. §103(a) over Cook in view of EP 1,286,406 A2 (hereinafter "EP '406"). This rejection is respectfully traversed.

Claim 4 recites in pertinent part, the fin structure is formed by laminating multiple thin plate members having through holes, ... gaps are formed between the multiple thin plate members in said filling unit ... the gaps ... are mutually connected via the through holes formed in the multiple thin plate members.

As noted above, Cook fails to teach or suggest several features of independent claim 1. Claim 4 depends from claim 1. EP '406 fails to cure the deficiencies of Cook in teaching the features of claim 4. More specifically, EP '406 fails to teach or suggest gaps that are mutually connected via the through holes. Fig. 1 and paragraphs [0024]-[0025] of EP '406 describe multiple baffles 30 having apertures 36 through which tubing 40, 40P passes. Using the Office Action's construction that each cavity within a baffle 30 is the claimed gap, these gaps are not mutually connected via the apertures 36 to receive the gas. Instead the baffle 30 cavities receive the gas through porous tubing 40P.

Because the combination of Cook and EP '406 fails to teach or suggest all features of claim 4, withdrawal of the 35 U.S.C. §103(a) rejection of claim 4 is respectfully requested

Claim 15 stands rejected under 35 U.S.C. §103(a) over EP '406 and under 35 U.S.C. §103(a) over Hirashima et al., JP 62 258996 A, in view of Toyooka et al., U.S. Patent No. 6,755,919. This rejection is respectfully traversed.

Independent claim 15 recites in pertinent part placing a filling unit in a tank container... said filling unit containing a gas absorbent/adsorbent for absorbing and/or adsorbing the gas; arranging a support member between said filling unit and said tank container to fill a gap formed between said tank container and said filling unit and hold said filling unit within said tank container; and heat-treating said tank container followed by water cooling.

EP '406 fails to teach or suggest arranging a support member between the filling unit and the tank container. The Office Action identifies lid 50 as the support member. (*See* Office Action, page 9.) As seen in Fig. 2 of EP '406, lid 50 sits atop the baffles 30 and does not fill a gap disposed between the baffles 30 and the canister 20.

In addition, EP '406 teaches that the canister 20 having an open end and the baffles 30 that have been placed inside the canister are shrunk through heat rolling. EP '406 does not teach or suggest following the heat rolling with water cooling. The Office Action asserts that "there is no patentable difference between heat treating with or without a water cooling step or heat-treating step before, during or after a water cooling step and as such, it seems that the invention would work equally well with any one of the above mentioned steps." (*See* Office Action, page 9.) Applicants respectfully disagree with this assertion, especially in view of the teaching in EP '406 that the heat rolling is performed to shrink the canister 20 to the baffles 30 as compared to the teaching in the present application that the heat treatment followed by water cooling is performed to improve the fatigue strength of the aluminum alloy of the tank container 20. (*See*, for example, paragraph [0055].)

Similarly, the combination of Hirashima and Toyooka fails to teach or suggest a support member between the filling unit and the tank container. The Office Action asserts that, in Hirashima, the volume change absorbing body 10 is construed to be the filling unit while the coil-like derivatives 12 are construed to be the claimed support member. (*See* Office Action, page 9.) Applicants respectfully submit that the space between the volume change absorbing body 10 and the container 7, and which is filled with the refined granular metallic hydride 11, must be construed to be a part of the filling unit because the metallic hydride adsorbs/absorbs the hydrogen gas fed into the container. Using this construction, the alleged support member (i.e., the coil-like derivatives 12) is not disposed between the claimed filling unit and tank container. Instead, the coil-like derivatives 12 are disposed within the

construed filling unit (i.e., the space between the volume change absorbing body 10 and the container 7.)

In view of the above, EP '406, or the combination of Hirashima and Toyooka fails to teach or suggest all claimed features of claim 15. Withdrawal of the 35 U.S.C. §103(a) rejection of claim 15 is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:LES/ccs

Attachment:
Petition for Extension of Time

Date: October 11, 2007

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